

In re Application of:
Chien et al.
Application No.: 09/954,571
Filed: September 11, 2001
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PATENT
Attorney Docket No.: ST-UCSD3210

Amendments to the Claims:

Please amend claims 99-104.

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1-69 (Cancelled)

70. (Previously presented) A method for treating heart failure associated with loss of cardiac muscle contractility in a patient, comprising administering to cardiac muscle a phospholamban (PLB) gene encoding a protein having an S16E mutation therein, to improve SERCA2 mediated cardiac muscle contractility.

71. (Previously Presented) The method of claim 70, wherein the gene is administered in a viral gene expression vector.

72. (Previously Presented) The method of claim 70, wherein the viral gene expression vector further comprises a promoter suitable for use in cardiac muscle.

73. – 76. (Canceled)

77. (Previously Presented) The method of claim 70, wherein the viral gene expression vector is an adeno-associated viral vector (AAV).

78. (Previously Presented) The method of claim 70, further comprising co-administering a sarcoplasmic reticulum CA2+ ATPase (SERCA-2) gene with the PLB gene to the cardiac muscle.

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79 - 85. (Canceled)

86. (Previously Presented) The method of claim 70, wherein the phospholamban gene further enhances SERCA-2 activity in the cardiac muscle.

87. (Previously Presented) The method of claim 70, wherein the phospholamban gene is administered with a permeabilizing agent.

88. (Previously Presented) The method of claim 87, wherein the permeabilizing agent is histamine, substance P or serotonin.

89. (Previously Presented) The method of claim 70, wherein the patient is a human.

90. (Previously Presented) The method of claim 70, wherein the patient is suffering from cardiac arrest or brachycardia with heart failure at the time that the gene is administered.

91. (Previously Presented) The method of claim 70, wherein the heart is isolated from systemic circulation at the time that the gene is administered.

92. (Canceled)

93. (Previously Presented) The method of claim 70, wherein practice of the method reduces the occurrence of cardiac interstitial fibrosis.

94 - 96. (Canceled)

97. (Previously Presented) The method of claim 70, wherein the viral expression vector is an adenoviral vector.

98. (Previously Presented) A method for treating heart failure associated with loss of cardiac muscle contractility in a patient, comprising administering to cardiac muscle by intracoronary injection a phospholamban (PLB) gene encoding a protein having an S16E mutation therein, to improve SERCA2 mediated cardiac muscle contractility.

99. (Currently Amended) The method of claim [[70]] 98, wherein the gene is administered in a viral gene expression vector.

100. (Currently Amended) The method of claim [[70]] 98, wherein the viral gene expression vector further comprises a promoter suitable for use in cardiac muscle.

101. (Currently Amended) The method of claim [[70]] 98, wherein the viral gene expression vector is an adeno-associated viral vector (AAV).

102. (Currently Amended) The method of claim [[70]] 98, further comprising co-administering a sarcoplasmic reticulum CA2+ ATPase (SERCA-2) gene with the PLB gene to the cardiac muscle.

103. (Currently Amended) The method of claim [[70]] 98, wherein the phospholamban gene further enhances SERCA-2 activity in the cardiac muscle.

104. (Currently Amended) The method of claim [[70]] 98, wherein the phospholamban gene is administered with a permeabilizing agent.